# Tanveen Bal

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## EDUCATION

**University of California, Irvine**                                    *Expected Graduation: March 2025*
*Bachelors of Science in Computer Science and Engineering*                        *GPA: 3.7 / 4.0*

## PROFESSIONAL EXPERIENCE

**Siminsights**                                                        *January 2025 - Present*
*Software Developer Intern | Python, Java, React, Next.js, HyperSkill (3D simulation app)*                Irvine, CA
- Leveraged LLMs to generate virtual realities, letting users edit simulations instead of starting from scratch
- Parsed LLM generations in Python to build a state machine that integrates with HyperSkill for hosting
- Engineering Java backend with API endpoints linking LLM, Python processing, and HyperSkill
- Migrated legacy React application to Next.js framework, enhancing performance and SEO

**Tomorrows AI**                                                        *September 2024 - December 2024*
*Software Developer Intern | React, HTML, CSS, Python, Vite, AWS DynamoDB*                        Remote
- Built a responsive full-stack UI for a European media platform, ensuring a seamless user experience
- Developed an article recommendation system with an API, using SVD and user behavior trends to tailor content, with AWS DynamoDB for database hosting
- Integrated NewsAPI to fetch live news and built an API to summarize articles using OpenAI LLM

## RESEARCH

**Design And Partnership Lab**                                                *January 2025- Present*
*Software Development | Python, Typescript, React, HTML/Tailwind CSS, Prisma*                        Irvine, CA
- Developed a front-end survey application using React and Prisma, with team of 7 developers
- Collaborated with the design team to enhance survey UI/UX for 1,000 teachers
- Implemented Deepgram's transcription API for live transcriptions, improving survey ease of use for users

**Drone Aviation Lab**                                                        *September 2024 - Present*
*Computer Vision Development | Python, React, Vite, Pytorch, Flask, OpenCV, Linux*                        Irvine, CA
- Led research on autonomous drone flight with real-time object detection using user-uploaded images
- Developed and trained a custom YOLO model on Raspberry Pi camera data to identify dogs and cats, incorporating a similarity model using cosine similarity for pet matching
- Built a web app with React and Flask featuring allowing user to view real-time video streaming

## PERSONAL PROJECTS

**Leksa |** *Food Social Media Platform*                        *React, Express.js, PostgreSQL, Digital Ocean, Node.js*
- Developed and launched a restaurant discovery/social media mobile app targeting college students
- Built restaurant and post recommendation models, deployed on DigitalOcean with Docker for scalability

**AI Minesweeper |** *Minesweeper Agent*                        *Python, OpenCV, TensorFlow, PyAutoGUI, Deep-Q Learning*
- Developed a Minesweeper agent using CNN trained on over 300,000 episodes, with 90% accuracy per tile
- Integrated automated control through PyAutoGUI for gameplay simulation to showcase AI decisions

## SKILLS

**Programming Languages:** Python, Java, C++, C, C#, JavaScript, TypeScript
**Libraries & Frameworks:** Flask, FastAPI, React, Django, Next.js, Prisma
**Development Tools:** Git, Maven, Docker, Vim
**Cloud Technologies:** AWS, Azure, DigitalOcean
**Machine Learning:** TensorFlow, PyTorch, Sci-kit Learn, NumPy, Pandas, OpenCV